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ABSTRACT

This study investigated a ninth grade developmental reading program--reading taught in a reading classroom by a reading teacher--in hopes of determining what could be considered an adequate length of time needed in this type of situation for a student to show specific gains and a definite carry over of skills into the content areas. Ninth grade students attending one high school were divided into levels of ability as determined by the Davis Reading Test. On the basis of these test results students were assigned to levels of instruction in English and reading classes. One half of the students at each level received reading instruction, while the other half received English during the first semester of their freshmen year. One class in reading and one class in English from each of four levels were randomly selected for study. The students in the English classes served as the control group, and the students in the reading classes served as the experimental group. At the end of the first and second quarters of instruction, grade cards for all the subjects were collected and evaluated. The findings indicated no significant differences in the overall grade averages of those in reading classes and those not in reading classes. (WR)

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THE CONTRIBUTION OF READING INSTRUCTION TO SUCCESS IN THE CONTENT AREAS IN THE SECONDARY SCHOOL

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TABLE OF CONTENTS

I. The Problem 1

Definitions 4

Limitations of the Study 4

II. Review of Literature 5

Summary 15

III. Methods and Procedures 19

Subjects 19

Placement and Description of Course 20

Sampling Procedures 20

Procedures 21

IV. Analysis and Results 22

Summary Table I 23

V. Summary and Conclusions 24

Implications for Future Research 25

BIBLIOGRAPHY 27

I. The Problem

As part of the general condition of insecurity and criticism that prevails in the mid-twentieth century, the faults and human weaknesses of our leaders, our basic institutions, and perhaps most of all, our youth are subject to almost continuous attack. In the newspapers, in books and magazines, and among professional educators one of the most often heard criticism is that the young people of today cannot read. Either implied or more directly stated is the idea that this condition is recent and that the youth of earlier generations read significantly better than present day young people. However, real comparisons of today's youth with those of earlier generations consistently indicate that the young people of today do read at least as well as their parents and grandparents did when they were in school. More realistic is the fact that in previous times printed matter was relatively scarce and social and economic conditions of the world less complex. In these earlier times limited reading skills were less of a handicap than in the world today, in which we find it essential to be able to read comprehensively and critically in order to survive civically, vocationally, or personally.

To be at all adequately prepared to face the demands of his reading power the young person today must develop a high level of efficiency in many different aspects of reading. In the secondary school of today the foundation of learning is reading and as the content becomes more and more difficult, basic as well as specialized skills in reading are needed to insure success. Many of these basic reading skills are introduced and utilized to some extent in the elementary school, but the need for

them to be relearned, reinforced, and put into fuller application becomes apparent as the student encounters more detailed content materials and more demands in his personal life to seek employment, to grow and develop intellectually and personally.

What is the secondary school to do? Is it necessary to add reading instruction to the already heavy curriculum? Should all high school students receive basic instruction in reading? And, who can best teach it, the teacher who deals with that specific vocabulary and skills, in other words the content teacher, or the so called "pro", the reading teacher? Because reading is the means to an end, it is often referred to as a tool. This implies the need for a growing craftmanship in its application to the content in which it is used. While we understand there is much in common in the reading of different contents, there is still much that is unique to each different content area and its particular study tasks. Perhaps "reading" is better understood in this context if it is defined as a language coping skill; that is, the language that is necessary in order to successfully cope with the particular content area. Unless it can be demonstrated that the direct teaching of reading in the reading class results in significantly better readers in the content, there is little reason for developing specific programs in reading at the secondary level. If reading in the content seems the most realistic approach then are the content area teachers ready and prepared to assume the responsibility for reading instruction that is necessary to insure a chance for success in that particular area? While steps are being taken to develop these kinds of programs in secondary schools there is still the immediate problem of helping students to read better - now.

According to previous respected research a good developmental reading

program can make contributions to the growth of high school students in the vital skill areas. For best results in this kind of an approach it seems that an organized program, with set objectives and goals is essential. Included would be time spent in developing positive attitudes toward reading, direction in growth of vocabulary, mastery of word forms, all phases of comprehension, and an understanding of the need for flexibility of rate of reading for different purposes. For the individual student, this program should be based on his needs at this particular time and in his particular situation. To put this type of program into action demands several things; adequately prepared personel, adequate facilities, and many different kinds and types of materials to meet students' needs. Given all of the above how long does it take to individually diagnose, prescribe, locate materials, and plan out a program with each student that will meet his interests and needs and have a good carry over into the vital content areas where the need for the reading skill is really located?

In this particular study the researchers investigated a ninth grade developmental reading program, reading taught in a reading classroom by a reading teacher, in hopes of determining what could be considered an adequate length of time needed in this type of situation for a student to show specific gains and a definite carry over of skills into the content area. With this goal, the students' grade averages at the end of the first quarter (nine weeks), second quarter, and semester were compared to similar ninth graders, in the same school, not enrolled in reading classes.

The researchers hypothesized that there would be no significant difference in overall performance based on grade averages at the end of the

first quarter, second quarter, or the semester between the two groups.

Definitions

For purposes of this study, the following terms will signify these prescribed meanings:

-reading/language-coding skills: those skills pertaining to development of the ability to independently read - comprehend and learn from content area materials, ie., cope with vocabulary, draw inferences, read for problem solving, etc.

-developmental reading program: does not pertain to a curriculum where each student is reading at or above grade level

-reading teachers: those teachers who are teaching reading classes at least ½+ of their teaching day

-content area teachers: those teachers teaching courses of specific content, ie., mathematics, English, social studies, etc.

-remedial readers: students who are reading two or more years below grade level will be grouped homogeneously, but expected to complete a developmental program at their appropriate level

-secondary schools: incorporating grades 9-12

Limitations of the Study

1. This study is limited to ninth grade students at one school, West High School, Phoenix Union High School District, Phoenix, Arizona. It should not be assumed that these findings could adequately reflect results of reading programs for older secondary students at West High or other secondary schools within the district.
2. A second limitation is that some discrepancies exist between later testing and advance placement into reading/English class levels. For advance placement the Davis Reading Test is employed by the Phoenix Union District. In the practical teaching situation teachers notice a number of students who seem not to be placed

on the proper level. Perhaps this situation would be noted with any reading test used for this purpose. Although inconsistencies are noted in this method of student placement they tend to balance themselves out in a study of this nature.

3. The data for this study was based on grade point averages only. Therefore the teacher given grades reflected an interplay between instructor and student, and was therefore susceptible to unaccountable human bias.

II. Review of Literature

With the current emphasis being placed upon remedial and developmental reading instruction in the secondary school, educators are considering how their total academic programs might reflect such concerns. The following questions concerning existing and future directional programs in reading education might be considered using the results of available research:

1. What are the challenges facing the secondary school in the field of reading ?
2. How important is an adequate reading ability and specific reading skills for success in the content area?
3. How are some faculties recognizing and handling the all school reading improvement stress?
4. What are some language arts programs that have been successful in secondary schools, in which reading and English skills compliment one another?
5. How can the teaching of reading be made more effective and provide adequate instructional aids in the secondary schools today?

The Challenges

In 1966 Burnett (3) discussed the issues and innovations in secondary school reading and deplored the slowness of the changes in the field of reading during the last 25 years. He felt that in spite of the stand that reading people had taken toward the importance of reading instruction on levels beyond the elementary grades, only disappointing progress had been made up to that time. He believed that this lack of progress was due to the inadequate preservice training of teachers as well as to the persistence of the attitude held by many high school teachers that they are subject matter specialists with little responsibility for the development of reading competency.

Secondary reading teachers were asked several thought provoking questions in an article by E. Frederick (5) such as: 1) Do students read more after they have been in a reading class? 2) Do students like to read because they've been in a reading class? 3) Do students study more efficiently after taking a reading class? 4) Do students perceive themselves as better readers because they've been in a reading class? and 5) Do students know how to apply their own experience to reading? One will notice that Frederick made no mention of standardized test scores as an indication of the reading teachers' success. Studies have indicated that there is little transfer from reading classes to content area courses or recreational reading. In the past there has often been no logical connection between a class in reading and one in social studies or other real life situations. Studies in reading have focused on specific skills and commercial programs rather than content. Frederick emphasized that treating reading as an isolated subject becomes a meaningless and depersonalized activity. He suggested that decoding and vocabulary skills should tie in with the students' background of experiences and with the material being presented in class. The author also recognized that

teacher education must begin to accept the responsibility of producing teachers who know how to teach students to read in the different content areas.

An article by Lilian Hinds (7) a former reading teacher at Central High School, Phoenix, Arizona included a graph of the Binet studies showing that high school teachers should expect a range of eight to ten years mental age in each grade level. Hinds stressed the importance of teachers being able to adequately interpret reading test results. A common error is to credit the student with too high a score. Most test results indicate a frustration level at which the person can't operate independently. Therefore, textbook reading material, the author suggested, should be one full grade below where the student frustrated on the standardized test. Hinds encouraged teachers to use multiple texts in a single class so that each student might operate at his independent level. Where only one textbook is available Lilian Hinds suggested that the able readers read text material into a tape recorder for the remedial readers. It is also vital in an all school reading program that the reading skill be taught continuously and the entire faculty should be willing to lend support.

J.H. Moe and F. Nonia (11) studied reading deficiencies among more able or gifted pupils. The idea that reading disabilities existed not only among the retarded reader school population was a newer consideration in 1960. After digesting the research on the gifted child they concluded that the reading of gifted children frequently failed to measure up to the potential of the child and that programs in reading improvement for children of this type could improve their status. Since it appeared to them that their most serious problem was one of slow rate of reading, a program of intensive training in speed reading was organized for 34 tenth grade honor students and their achievement compared

with a group of controls at the end of the six week program. During the training time intensive work was done on remedical reading practices with particular emphasis on speed. At the end of the experimental program, the control group showed a mean gain on the Iowa Silent Reading Test of 2 percentile points in general reading ability, while the experimental group gained 11 percentile points. In reading rate the experimental group gained from a pre-test mean of 264 words per minute to a post test mean of 896. The writers concluded that educators had not been sufficiently aware of the possibility of growth in reading rate and skills among gifted students.

Reading in the Content Areas

A study conducted in 1957 by L.L. Krantz (10) researched the skills and abilities that seemed predictive of later achievement in the content areas. He questioned seriously the program of basic skills that were taught in the elementary schools at that time, and their relationship to success in later years in the subject matter confronted by most high school students. He found while many of the skills were the so called "basics", the students displayed a lack of skill in applying them to the particular content when they were needed. He found that each subject matter did require use of certain skills more or less specialized to that area only, and the carry over from when they were taught in a simulated situation to when they were needed was very little.

Ruth Strang (15) outlined how reading skills could be integrated into the content areas; since reading tasks presented in most content fields are more complicated than those which students face in basal reading programs. The author mentioned the following reading skills as being necessary for all academic areas. They included 1) the ability to de-

termine the purpose of the selection and locate the main ideas, 2) flexibility in adapting one's reading rate to the particular material, and 3) the ability to simulate what one reads and relate it to one's present knowledge. However, Strang also stated that secondary teachers of every subject must be responsible for giving instruction in the reading skills that are required for success in their particular field.

Harold Herber (6) went deeper into reading in the content. He was concerned with the lack of personnel to develop and/or work in reading in the regular classroom. His study led him to concentrate on seven schools that qualified for Title I assistance and develop a program to incorporate reading instruction in the content areas in the secondary school. He assumed 1) teachers made the critical difference, 2) Content teachers needed the additional expertize. 3) There is a shortage of consultants to work with content teachers. 4) Neither teachers nor consultants needed to be experts in reading before the program was started. and 5) Ongoing inservice education was the basic ingredient of a successful program. Based on these assumptions a program of summer practicums was set up for interested and willing content teachers. In the Fall they returned to their schools and worked as consultants to teachers in their own content areas. Individual department meetings were held and inservice experiences were continued throughout the school year. At these inservice meetings specific topics were examined and treated in depth. Herber found that reading content specialists had experienced success in working with their colleagues and that no communication gap existed.

Faculty Awareness

Hunt (8) noted that in a questionnaire of 371 colleges and universities in 1961, the student teaching supervisors reported a disturbing

absence of reading skill instruction on the junior or senior high school level; and when any formal teaching was done it only encompassed a re-teaching of the primary skills. The author mentioned that if a proposal were made that English should not be taught after the sixth grade, except for a limited number requiring remedial English, the suggestion would seem absurd. Yet one may assume that reading skills don't teach themselves any more than do skills in English grammar and composition. Hunt also cited an analysis of 570 questionnaires for a random sample of Michigan high school teachers in 1961 which revealed that only one-third of these teachers were required to teach any reading within the framework of their course. Additional study revealed that about one third of the Michigan high school students didn't read well enough to do the expected classroom assignments. Further surveys pointed out that most of the reading teachers and supervisors in secondary schools have little or no actual training in the field of reading and the programs offered were frequently remedial rather than developmental, or both.

Bader's (1) report recognized that too often teachers feel pressured to cover the material and don't find time to teach reading, too. Therefore a program was recently initiated at Michigan State in which student teachers worked with their university supervisor and a secondary reading specialist during their field experience. Methods of teaching in the content areas were introduced at weekly group sessions, to be tested in the classroom by the student teachers and discussed at the next meeting. After the field experience had been completed the student took a three week seminar in secondary reading in order to refine his skills. Berger explained that the goal of the program was to produce content area teachers who viewed reading as an essential part of their instruction.

R. Karlin (9) in 1964 investigated the problem of providing for individual as well as group needs of learners. This problem has been a challenging one to teachers on all levels and Karlin felt that it was more of an organizational problem than one of methodology. He suggested several different ways in which classroom procedures could be organized. 1) Individualized reading, in which each student self-selects materials to read and is given specific instruction in the skills and competencies as they are sensed by the learner and his teacher. 2) Differentiated assignments in the content areas with the learning tasks and materials differentiated in terms of the ability and potential of the learner. 3) Karlin also suggested the use of intra-class grouping in which the class is divided into sub-groups in terms of instructional levels. And, 4) Inter-class grouping was described in which students of similar abilities were grouped for reading instruction regardless of school grade level. All plans showed promise, with no one significantly better than the other. Karlin concluded that no organizational plan, no hardware, and no set of materials alone could solve all of the problems in reading instruction or meet the students' needs.

Successful Language Arts Programs

The Centinela Valley Union High School District in Los Angeles initiated a district wide developmental reading program for freshmen in 1959. Berkey (2) described the success of this program which was considered very experimental at the time of its initiation. Each high school was provided with two reading laboratories and all ninth grade students were required to spend one period a day for eight weeks in the reading laboratory. Specifically, the reading lab emphasized reading for a purpose, flexible reading rates, skimming, vocabulary building, rate building,

reading for main ideas and details, reading to evaluate, and study skills. One period a week for the remainder of the year was also spent in supervised classroom reading in which specifically prepared district materials were available for follow up study. The reading gains for the 1964-65 school year were very significant. At the beginning of the program the average reading level of the students was 7.7 school years. The average reading level at the end of the lab session was 8.7, or a total gain of ten months in eight weeks. At the end of the school year, after students had completed the follow up program, the average reading grade level was 9.5, for an overall increase of 1.8 years during the school year.

Secondary language arts classes for remedial readers have also proven to be effective. Scott (14) reported on an experimental program where students from grades ten, eleven, and twelve were grouped together in classes which met for two-period time blocks each day. Students received one unit of credit for English and one for remedial reading. Classroom climate was such that most students experienced success and felt a sense of involvement. Criticism of oral expression and "red-marking" of compositions were minimized; and all students were graded on their own achievement. Listening, speaking, reading, and writing skills were taught as instructional components instead of isolated skills. Students were very interested in "reading for survival" as it related to using telephone books, filling out forms, interpreting credit and interest rate, and understanding road maps and signs. Unpressured writing activities such as writing in journals and reacting to recordings, films, pictures, and paintings were used as stimuli for free response writing. Teachers were asked to concentrate on only one kind of writing error at a time. After reading compositions, common errors were discussed and

students were asked to find their own errors. One principal attributed the fact that there had been no dropouts in the first three months of school, as compared with an average of forty in previous years, to the success of the language arts program. The author concluded that integrating reading with the other language art forms such as writing, speaking, and listening was the most effective way to improve reading comprehension.

Statistical longitudinal studies investigating the effectiveness of remedial reading instruction are not entirely encouraging. Fiedler (4) noted two studies, one by Balow in 1965, and one by Preston and Yarington in 1967 which indicated that improvement slows or stops after remediation is discontinued. Further reading growth for such students seemed to depend on continued long term attention to the problem. However, Fiedler believed that a student's responses to questions about reading activities and his performance in reading related tasks would be reliable as indicators of progress. After the initial remediation conducted in 1966, an average gain of 1.7 years was recorded in vocabulary and 2.0 years in comprehension, using the Gates Reading Survey Forms M2 and M3 as pre and posttests. An investigation made at the close of the 1970 school year then compared responses to reading related questions from an interest inventory given twenty nine students on entering the clinic, with responses to similar questions given on a follow up inventory to the clinical students who were graduating from high school. A definite positive trend was shown in all questions except the two which related to reading enjoyment and library use. Yet, forty five percent of the students indicated improvement in that area, too. Fiedler's analysis also suggested that remedial students changed their attitudes and tastes about reading after clinical instruction, but had difficulty reflecting

this in improved grades.

Effective Methods For Teaching Reading

In 1966 Alice Scofield (13) talked about "What's Wrong With Reading Programs?" She stressed the importance of combining research with results and good practice. She also suggested that some of the problems in reading programs were due to hasty organization, sparse research, and lack of concern for individual student needs.

In a report on what abilities and skills reading tests should measure Pauk (12) stated that test items should be very similar to the material the students will actually experience in class. Therefore, a high school reading test should draw equally from the fields of science, math, social studies, and English. Walter Pauk emphasized that present reading tests were artificial because they did not measure the real type of school work the student faced or the manner in which he usually performed. Three examples point out the artificiality of such tests. 1) Almost all reading tests are timed, which penalizes slow, methodical students. 2)They are overloaded with excerpts from literature and don't use the language of the textbooks. and, 3) Reading tests stress esoteric vocabulary terms taken from literature. Pauk concluded that reading tests should indicate if the students would be able to successfully complete the work in their specific academic courses.

Thomas (16) reported on the duties of a reading consultant at the University of Chicago's laboratory school. Even though the average U-High student was a 90th percentile reader, the freshman class reflected reading levels that were spread over seven grades. Gifted students also weren't being challenged, and vocabulary scores trailed below scores in comprehension and speed. When the reading consultant was hired she was asked not to issue any directives or evaluate teachers. Thus four

ways of serving teachers came into being: 1) meeting with groups, 2) conferences with individuals, 3) classroom visits, and 4) the creation of a resource center. Teachers requested reading levels on their students and the librarian asked for a file of reading levels on each child in the school, so that books of appropriate difficulty could be found for them. As a result of group meetings, teachers started to make tests at the beginning of the fall term in which students read sample passages and performed tasks that were indicative of ones that would confront them all year. Results were recored on a Reading Needs Chart and instruction was tailored to the needs revealed. Teachers learned to use readability formulas on their books and speed adjustment techniques for different kinds of reading activities were discussed, too. The reading resource center offered a collection of commercial materials plus professional books and useful research findings. Materials were to be borrowed freely from the center. After six years of operation the author summarized some of the noticeable changes in faculty reading awareness. On walking into a social studies class one could find a textbook of appropriate difficulty for any student in the class. The art teacher, aware that poor readers often sought success in a nonacademic field, employed art to initiate individualized reading. PE coaches brought attractive sports books into the gym and briefly reviewed each one before lending them to their students. Thomas mentioned that U-Highs median had also improved on standardized tests and the imbalance between vocabulary, speed, and comprehension scores had become less marked.

Summary

The effectiveness of reading instruction and the reading abilities of students in the secondary schools have been the subject of much research. A study by Burnett (3) pointed out the lack of real change,

except in theory for the past 25 years. He felt that the attitude of the teachers themselves was the biggest impediment to progress and noted that the attitude of many secondary teachers was that they were subject matter specialists with little responsibility for the development of reading competency in their students. According to Frederick (5) secondary reading teachers often haven't tried to relate their classroom activities with the students' interests or academic subjects, and have relied too heavily on commercial products. It was hypothesized that such instructional techniques wouldn't foster increased grade point averages in content area courses.

An article by Hinds (7) urged instructors to learn how to interpret students' test scores and be able to understand what their frustration level meant in order that they wouldn't be deceived by standardized test scores. She also stressed the importance of using multiple texts in secondary classrooms where the range of reading scores often spread from eight to ten years.

Moe and Nonia (11) studied reading deficiencies among the more able or gifted, and while they found their comprehension good, their lack of speed and a flexible reading rate was a hinderance in reading to their full potential.

A study by Krantz (10) indicated that there was a high relationship between reading ability and success in the interpretation of content materials in secondary school. A further conclusion was that each subject matter did require certain specialized skills. He also pointed out that there seemed to be a serious lack of carry-over from skills taught in elementary school in hypothetical situations to where they are really needed in high school. Strang (15) reported that teachers must accept responsibility for teaching reading skills that are related to their

particular field of study, realizing that many skills are applicable in all areas of study. Herber (6) in a program described using content teachers as specialists through a summer of training practicums. In the Fall the content/reading specialists returned to their own schools and content areas in which they served as consultants to the other teachers in their respective areas. Inservice was continued for all teachers with good results and the barriers between reading and content diminished considerably.

Research conducted in Michigan by Hunt (8) pointed out the lack of reading skills being taught on the high school level, even though teachers were aware that one-third of their students didn't read well enough to successfully complete their courses. However, later research in Michigan reported on by Bader (1) indicated that student teachers were being instructed on how to teach reading skills to their content area classes, as the need for reading development beyond grade school was emphasized to them.

Several successful secondary developmental, corrective, and remedial reading and language arts programs were analyzed. Karlin (9) researched four different types of class organizations within the reading classroom situation. 1) individualized reading, 2) differentiated assignments, 3) intra-class grouping, and 4) inter-class grouping. He concluded that no organizational plan alone held all the answers to the best way to teach reading. Berkey (2) described a freshman program centered in a reading laboratory with a special follow up curriculum that was continued in the English classrooms. Scott (14) described a program for the remedial reader where listening, speaking, writing, and reading skills were taught simultaneously by employing materials that stressed teenage interests. As a result of the success the students were experiencing, attitude and dis-

cipline problems for those remedial readers in the language arts program became almost nonexistent and the dropout rate decreased significantly too. However, Fiedler (4) quoted studies in which remediated clinical cases were found to have a difficult time reflecting their reading achievement in higher grade point averages, even though their attitudes and interest in reading activities had increased. Scofield (13) stressed that the key to successful reading programs was achieved by utilizing research in the organization and operation of these new curriculums.

In an article on testing, Pauk (9) concerned himself with the inadequacies of many reading tests. He felt that most of the tests were not valid because they were not similar to the materials which were presented in class. In many instances such tests weren't considered to be realistic because they were timed and used literary terminology that didn't resemble the language of the textbooks.

The possibilities for increased teacher and student awareness of reading problems and possible cures were the concern of an evaluation by Thomas (16). After a full time reading consultant was hired at a secondary school, teachers could request reading levels on each of their students, teachers were taught how to construct preliminary tests to ascertain if the course material was too difficult for their students, and multiple textbooks were employed to cover the range of reading abilities found in certain classrooms. This new awareness of reading was also reflected by significant gains in standardized test scores.

The research summarized above gives a general overview as to what is happening on the secondary level in reading education. Much emphasis is being placed upon the training of content area teachers who are equipped to instruct reading skills within their own classrooms. Reading consultants are also being hired to work with entire faculties and help them

in selecting appropriate material for their students. In many schools a language arts program is developing in which both the reading and English departments work together instead of asking the students to learn each communication skill separately from a different teacher. Individualization of materials and student centered lesson plans are being utilized. The question remains then as to how statistically significant these new programs and concepts will appear as reflected by standardized achievement scores or general academic performance?

III. Methods and Procedures

Subjects

In the Fall of the school year 1972-73, West High School initiated a program of developmental reading for all ninth grade students. The students were divided into levels of ability as determined by the Davis Reading Test[1], which is administered at the end of the eighth grade in all schools which matriculate students into the Phoenix Union District. On the basis of these test results students were assigned to levels of instruction in English and Reading classes. One half of the students at each level received reading instruction while the other half received English during the first semester of their freshman year. This procedure was to be reversed for the second semester. Upon the completion of the ninth grade year freshmen English credit would be received for this combination.

The Stanine Scores and Grade Placement for the Davis Reading Test run approximately as follows:

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1. Davis Reading Test Forms 2a, 2b, 2c, 2d, Psychological Corporation 304 E. 45th Street, New York, New York, 10017

Stanine Score	Approximate Grade Placement
9	10+
8	10+
7	10+
6	10+
5	7.8-9.9
4	6.0-8.0
3	4.9-6.2
2	Below 5
1	Below 3

Placement and Description of Course

The course was called Modern Reading Techniques- MRT and the students were divided into four ability groups, which coincided with their English placement. They were:

Eng.-MRT-3	Stanines 1, 2, 3, 4
Eng.-MRT-2	Stanines 5 and 6
Eng.-MRT-1	Stanines 7 and 8
Eng.-MRT-Advanced	Stanine 9

Modern Reading Techniques is an individualized program of reading instruction required of all freshmen for one semester. After initial diagnosis the instructional program on all levels included individual prescription, the establishment and reinforcement of basic reading skills, such as word attack and comprehension, study skills, flexibility of rate, and information retrieval. English credit is offered for the first semester of this program and students who need additional help may continue for a second semester and receive Reading credit.

Sampling Procedures

One class in Reading and one class in English from each of the four levels were randomly selected for study. The students in the English classes served as the Control Group and the students in the Reading classes served as the Experimental Group. This sample consisted of 95 Reading students and 105 English students for the first nine weeks of instruction and 89 Reading students and 108 English students for the second nine weeks. The discrepancy

of the number of students from the first grading quarter to the second grading quarter was due to transfers and withdrawals.

Procedures

At the end of the first quarter of instruction and again at the end of the second quarter, grade cards of all the students involved in the study were collected, with the aid of the counseling department. Since the students are graded on a descending scale from 1 to 4 all grades were changed to the following values:

5 points for a grade of "1"
4 points for a grade of "2"
3 points for a grade of "3"
2 points for a grade of "4"
1 point for a grade of "Incomplete"
0 points for a grade of "F"

Scores were individually averaged and recorded into their respective class lists. It was noted during this process that some students were enrolled in only 4 classes and some were enrolled in as many as 6. Except for the Reading/English combination many classes were not the same and therefore no pattern or core of subjects was observed. It was also noted that the students who enrolled in up to 6 classes seemed to take the harder subjects and those enrolled in as few as 4 classes took the easier ones. Since the groups were to be compared by levels this situation seemed to balance itself out. Thus, Advanced English students and Advanced Reading students were found to take more and harder class loads, while Level 3 English and Level 3 Reading students tended to take fewer and easier classes.

Once the scores were gathered, changed into a more workable form, and put into their respective levels and classes, a T-Test was used to compare the Means of each level for significant differences at the .05 level.

IV. Analysis and Results

The findings of this study indicated no significant differences in the over all grade averages of those in reading classes and those not in reading classes, except for the semester averages of those students enrolled in Advanced Reading. It was observed that in general, graded seemed to drop during the second nine week grading period. Therefore the semester cumulative grade averages tended to be lower than projected at the conclusion of the first quarter.

It is notable that the results of this study concur with Fiedler (4) and Krantz (10) in that it is apparently difficult for students to reflect a carry over of their reading skills into content area courses as measured by grade point improvement. Similarly, Moe and Nonia (11) also found it to be easier for "advanced placement" secondary students to show significant gains in reading after a short period of instruction.

The results of the t-test for comparison of mean differences is presented in Table 1. Generally, the reading classes had a slightly higher mean score on each level than the classes not receiving reading instruction, excluding the second quarter and semester grades of those students enrolled in English I.

TABLE I. RESULTS OF SIGNIFICANCE TEST FOR CLASS MEAN GRADE AVERAGE DIFFERENCES OF THOSE RECEIVING READING INSTRUCTION AND THOSE NOT RECEIVING READING INSTRUCTION.

Levels	Number of Students	Reading	No Reading	t-Ratio
A	1st 9 weeks N=45	4.485	4.12917	1.68248
	2nd 9 weeks N=43	4.38947	4.08333	1.40813
	Semester N=43	4.47895	4.09231	2.33794*
1	1st 9 weeks N=52	3.84167	3.8087	.14535
	2nd 9 weeks N=48	3.5	3.58621	-.2952
	Semester N=52	3.61304	3.74483	-.525476
2	1st 9 weeks N=55	3.61538	3.48269	.510596
	2nd 9 weeks N=54	3.41818	3.37667	.140755
	Semester N=54	3.37917	3.3	.294979
3	1st 9 weeks N=50	3.2	2.876	1.1796
	2nd 9 weeks N=48.	2.9087	2.832	.255039
	Semester N=49	2.99167	2.74	1.01533

Required t value at .05 level of significance = 2.021*

While the Advanced level classes were considered to contain the students with the most ability and the third level the least, the means of the four levels of classes came out in that order also. While mean differences were noted at each level, the classes of students who received reading instruction were higher on 3 out of 4 levels, with the significant difference appearing at the advanced level.

From the data obtained it was interesting to note that the mean grade averages for all groups, excepting the semester evaluation on the Advanced level, were lower for the second nine weeks. Therefore, the semester cumulative grades of the students involved in the study were lower than projected at the end of the first academic quarter. A valid and significant reason for the lower grade averages, which were reflected in the class mean grade averages, was not able to be established.

V. Summary and Conclusions

The relationship between reading instruction and success in secondary school content must be understood in order to develop adequate reading programs. The length of time a student needs to be involved in reading instruction in order for a carry over to be noted in the content must also be considered. The researchers hypothesized that the eighteen week time period studied for this particular project would yield no significant differences in the students over all grade averages whether they had received reading instruction or had not received reading instruction. In order to determine if there was a carry over into the content areas from reading instruction received in a reading class, the grade averages of students from each of the four levels of instruction were gathered at the end of the first quarter and at the end of the first semester. The classes to be tested were randomly selected: one class in reading and one not in reading, from each level. A total of eight classes were used for the study. Mean group scores were compared using a t-test. The only statistically significant difference was found on the advanced level for the students who had received reading instruction.

Although only one group revealed a statistically significant difference, the findings did show slight differences. Some of these dif-

ferences were noteworthy. In general, the reading students had a higher mean grade average than the students not receiving reading instruction, on all four levels. At the end of the first quarter the largest mean differences between groups occurred at the Advanced Level. During the first quarter of the study the smallest mean difference occurred at the next highest level, or between the Level I classes. For the second quarter and semester grades, Level One students not enrolled in reading received a higher mean grade point average than those students taking a reading course. The semester grade averages of the Level II students also showed a slight statistical difference. Rechecking the randomly selected groups and their teachers, it was noted that the teacher of the Level I students studied, who were not enrolled in reading, was a teacher who had a split assignment as a reading/English teacher. The possibility that there might be some carry over of methods and materials seemed credible. However, further study would be necessary to justify this conclusion.

In general the results of this study supported the hypothesis that there would be no significant differences in the over all grade averages of students at the end of one semester of instruction, whether they had received reading instruction or not. The advanced levels, however, did show a significant difference for the semester mean grade point average. Thus, it can be implied that students reading several years above grade level are able to quickly assimilate reading skills as they are reflected in their content area courses.

Implications for Future Research

The results of this study and previous research reveal a need for further investigation in the field of academic reading skills and how they can be applied in the various content area subjects. This might

be approached through various avenues:

1. It is recommended that reading instruction in a reading class continue for longer than one semester, so that there will be a significant carry over into the content area subjects.

2. A follow up at the end of one full year of instruction would indicate if the trend toward higher grade averages of the reading students would increase with continued instruction.

3. A follow up of this research study is recommended in order to investigate the reason why grade averages were lower for the second quarter and semester grading periods as compared to the first quarter.

4. An experimental study designed to indicate the increase in grade point averages when reading is taught in conjunction with content area classes is also recommended.

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